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<p>(21) International Application Number: PCT/US97/03313</p> <p>(22) International Filing Date: 27 February 1997 (27.02.97)</p> <p>(30) Priority Data:</p> <table border="0"> <tr> <td>60/012,705</td> <td>28 February 1996 (28.02.96)</td> <td>US</td> </tr> <tr> <td>60/013,612</td> <td>28 February 1996 (28.02.96)</td> <td>US</td> </tr> <tr> <td>60/020,003</td> <td>21 June 1996 (21.06.96)</td> <td>US</td> </tr> </table> <p>(71) Applicant (for all designated States except US): NOVARTIS AG [CH/CH]; Schwarzwaldallee 215, CH-4058 Basel (CH).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): VOLRATH, Sandra, L. [US/US]; 4225 Pine Oak Drive, Durham, NC 27707 (US). JOHNSON, Marie, A. [US/US]; 408 Heather Drive, Raleigh, NC 27606 (US). POTTER, Sharon, L. [US/US]; 3837 Whispering Branch Road, Raleigh, NC 27613 (US). WARD, Eric, R. [US/US]; 3003 Montgomery Street, Durham, NC 27705 (US). HEIFETZ, Peter, B. [US/US]; 3916 Sturbridge Drive, Durham, NC 27713 (US).</p> <p>(74) Agent: MEIGS, J., Timothy; 520 White Plains Road, Tarrytown, NY 10591-9005 (US).</p>	60/012,705	28 February 1996 (28.02.96)	US	60/013,612	28 February 1996 (28.02.96)	US	60/020,003	21 June 1996 (21.06.96)	US	<p>(81) Designated States: AU, BA, BB, BG, BR, BY, CA, CN, CU, CZ, FI, GE, GH, HU, JP, KG, KR, KZ, LC, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, TJ, UA, US, UZ, VN, YU, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>
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<p>(54) Title: DNA MOLECULES ENCODING PLANT PROTOPORPHYRINOGEN OXIDASE AND INHIBITOR-RESISTANT MUTANTS THEREOF</p> <p>(57) Abstract</p> <p>The present invention provides novel DNA sequences coding for plant protoporphyrinogen oxidase (protop) enzymes from soybean, wheat, cotton, sugar beet, grape, rice and sorghum. In addition, the present invention teaches modified forms of protop enzymes that are herbicide tolerant. Plants expressing herbicide tolerant protop enzymes taught herein are also provided. These plants may be engineered for resistance to protop inhibitors via mutation of the native protop gene to a resistant form or they may be transformed with a gene encoding an inhibitor-resistant form of a plant protop enzyme.</p>										